2006 Live Fire Burn

Objectives

- 1. Understand fire behavior.
- 2. Understand and demonstrate ventilation.
- 3. Understand and demonstrate fire attack.

Fire Behavior

- Heat transfer, conduction, convection, radiation.
- Fuels found as a liquid, gas, solid.
- Only gases burn.
- Pyrolysis or vaporization turns solids and liquids to gases.
- Gases most dangerous, natural state, ready to burn.

Fire Behavior

- Must have fuel, heat, 02, chain reaction.
- Phases of fire-incipient, rollover, steady-state or burning phase, flashover, hot-smoldering.
- Be careful of thermal layering of gases.
- Extinguishment-remove one or more elements of fire tetrahedron.

Ventilation

- Ventilation is the systematic removal and replacement of heated air, smoke and gases from a structure with cooler air.
- Vertical, horizontal, mechanical, natural, hydraulic.
- Advantages: rescue easier, fire attack easier and safer, property conservation.
- Coordinate ventilation with fire attack.

Ventilation

- Needed due to construction, plastics, insulation, synthetic materials, fuel load.
- Retains heat, ventilation is needed sooner than in the past.
- Full PPE and a charged hose line are necessary.
- Choose a ventilation plan/place that won't encourage fire spread.
- Beware of back-draft or flashover.

Ventilation

- Is there a need for ventilation at this time?
- Where is ventilation needed?
- What type of ventilation should be used?
- Never put a hose line in a ventilation opening.
- Try to work with the wind.

Fire Control

- Fire attack must be coordinated, do you need to do rescue or protect exposures?
- Coordinate with ventilation and other crews.
- Attack crew needs forcible entry tools.
- Approach and attack from the unburned side to reduce fire spread.
- Be careful of thermal imbalance.

Fire Control

- If the fire is localized, direct the stream at the base of the fire in short bursts as needed. If the area is well involved in fire and ventilated, sweeping the ceiling or rotate the nozzle clockwise.
- Relief for attack crew might be needed.
- Wear full PPE during overhaul.

Fire Attack

- The most efficient use of water on free-burning fires is made by a direct attack on the base of the fire from a close position with a solid or straight stream.
- Do not apply water too long or the thermal balance will be upset.

Fire Attack

- When fire conditions are too intense, an indirect attack can be made (not a good idea with victims).
- Solid, straight or narrow fog should be directed at the ceiling and placed back and forth in the superheated atmosphere.
- This produces large quantities of steam.
- Once you have ventilation then you can advance and do a direct attack.

Fire Attack

- The combination method uses the steam-generating technique of ceiling level attack combined with a direct attack on materials burning near the floor.
- The nozzle may be moved in a “T”, “Z” or “O” pattern starting at the ceiling level then down to the floor.
- The “O” is the most common.

Fire Attack

- Must use enough water to cool but not too much and cause damage.

2006 Live Fire Burn

- Name/ID _____

_____

- Date _____
- Rig/shift _____
- Captain's Signature

_____

- FF understands fire behavior

  Y _____ N _____

- FF performs ventilation

  Y _____ N _____

- FF performs fire attack

  Y _____ N _____